

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Alexander A. Maltsev et al.

Title: SYSTEM AND METHOD FOR TWO CHANNEL FREQUENCY OFFSET ESTIMATION OF OFDM SIGNALS

Docket No.: 884.783US1

Filed: September 30, 2003

Examiner: Unknown



Serial No.: 10/675240

Due Date: N/A

Group Art Unit: 2661

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

We are transmitting herewith the following attached items (as indicated with an "X"):

- ☒ A return postcard.
- ☒ An Information Disclosure Statement (2 pgs.), Form 1449 (1 pg.), and copies of 8 cited documents (Copies of US Patent/Publication documents not provided; application filed after June 30, 2003).

If not provided for in a separate paper filed herewith, Please consider this a PETITION FOR EXTENSION OF TIME for sufficient number of months to enter these papers and please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
Customer Number 21186

By: Ann M. McCrackin  
Atty: Ann M. McCrackin  
Reg. No. 42,858

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 19 day of March, 2004.

KACIA LEE  
Name

Kacia Lee  
Signature

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
(GENERAL)

S/N 10/675240

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Alexander A. Maltsev et al.	Examiner:	Unknown
Serial No.:	10/675240	Group Art Unit:	2661
Filed:	September 30, 2003	Docket:	884.783US1
Title:	SYSTEM AND METHOD FOR TWO CHANNEL FREQUENCY OFFSET ESTIMATION OF OFDM SIGNALS		
Assignee:	Intel Corporation	Customer No:	21186

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INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

In compliance with the duty imposed by 37 C.F.R. § 1.56, and in accordance with 37 C.F.R. §§ 1.97 *et. seq.*, the enclosed materials are brought to the attention of the Examiner for consideration in connection with the above-identified patent application. Applicants respectfully request that this Information Disclosure Statement be entered and the documents listed on the attached Form 1449 be considered by the Examiner and made of record. Pursuant to the provisions of MPEP 609, Applicants request that a copy of the 1449 form, initialed as being considered by the Examiner, be returned to the Applicants with the next official communication.

The present application is either a U.S. national patent application filed after June 30, 2003 or an international application that entered the national stage under 35 U.S.C. § 371 after June 30, 2003. Thus, Applicant believes that the U.S. Patent & Trademark Office has waived the requirement under 37 C.F.R. 1.98 (a)(2)(i) for submitting a copy of each cited U.S. patent and each U.S. patent application publication. The waiver is provided in a pre-OG notice from the U.S. Patent & Trademark Office entitled "Information Disclosure Statements May Be Filed Without Copies of U.S. Patents and Published Applications in Patent Applications filed after June 30, 2003" and dated July 11, 2003. Applicant acknowledges the requirement to submit copies of foreign patent documents and non-patent literature in accordance with 37 C.F.R. 1.98(a)(2).

Pursuant to 37 C.F.R. §1.97(b), it is believed that no fee or statement is required with the Information Disclosure Statement. However, if an Office Action on the merits has been mailed, the Commissioner is hereby authorized to charge the required fees to Deposit Account No. 19-0743 in order to have this Information Disclosure Statement considered.

INFORMATION DISCLOSURE STATEMENT

Serial No : 10/675240

Filing Date: September 30, 2003

Title: SYSTEM AND METHOD FOR TWO CHANNEL FREQUENCY OFFSET ESTIMATION OF OFDM SIGNALS

Assignee: Intel Corporation

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Dkt: 884.783US1 (INTEL)

The Examiner is invited to contact the Applicants' Representative at the below-listed telephone number if there are any questions regarding this communication.

Respectfully submitted,

ALEXANDER A. MALTSEV ET AL.

By their Representatives,

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Date March 19, 2004 By Ann M. McCrackin  
Ann M. McCrackin  
Reg. No. 42,858

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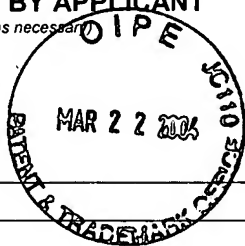
KACIA LEE  
Name

Kacia Lee  
Signature

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(Use as many sheets as necessary)



Sheet 1 of 1

Complete if Known

Application Number	10/675240
Filing Date	September 30, 2003
First Named Inventor	Maltsev, Alexander
Group Art Unit	2661
Examiner Name	Unknown

Attorney Docket No: 884.783US1

**US PATENT DOCUMENTS**

Examiner Initial *	USP Document Number	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	Filing Date If Appropriate
	US-2002/0159533-A1	10/31/2002	Crawford, J. A.	375	260	08/21/2001
	US-5,652,772	07/29/1997	Isaksson, Mikael, et al.	375	367	01/22/1996
	US-5,732,113	03/24/1998	Schmidl, Timothy M., et al.	375	355	06/20/1996
	US-6,295,326	09/25/2001	Tonissen, Shane M., et al.	375	350	03/01/2000
	US-6,320,915	11/20/2001	Stott, Jonathan H., et al.	375	340	05/01/1998
	US-6,359,938	03/19/2002	Keeyill, Peter A., et al.	375	316	10/22/1997
	US-6,363,128	03/26/2002	Isaksson, Mikael, et al.	375	355	06/23/1999

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Foreign Document No	Publication Date	Name of Patentee or Applicant of cited Document	Class	Subclass	T <sup>2</sup>
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**OTHER DOCUMENTS -- NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		CHEN, BOR-SEN, et al., "Frequency Offset Estimation in an OFDM System", <u>2001 IEEE Third Workshop on Signal Processing Advances, Wireless Communications 2001</u> , (2001), 150-153	
		DACCA, M. R., et al., "Frequency Offset Tracking in OFDM Based on Multicarrier PLL", <u>21st Century Military Communications Conference Proceedings, Vol. 2</u> , (2000), 912-916	
		LARSSON, ERIK G., et al., "Joint symbol timing and channel estimation for OFDM based WLANs", <u>IEEE Communications Letters, Vol. 5, No. 8</u> , (August 2001), 325-327	
		LI, JIAN, et al., "Carrier Frequency Offset Estimation for IFDM-Based WLANs", <u>IEEE Signal Processing Letters, Vol. 8, No. 3</u> , (March 2001), 80-82	
		MATHEUS, KIRSTEN, et al., "Parameter Optimization for Decision Directed Frequency Tracking for Coherent OFDM", <u>Global Telecommunications Conference, 2000, ICCC Vol. 3</u> , (2000), 1402-1406	
		MORELLI, MICHELE, et al., "Carrier-Frequency Estimation for Transmission over Selective Channels", <u>IEEE Transactions on Communications, Vol. 48, No. 9</u> , (September 2000), 1580-1589	
		PERETS, R., et al., "A New Phase and Frequency Offset Estimation Algorithm for OFDM Systems Applying Kalman Filter", <u>22nd Convention of Electrical and Electronics Engineers in Israel, IEEE, XP010631136</u> , (12/01/2002), 300-302	
		SCHMIDL, TIMOTHY M., "Robust Frequency and Timing Synchronization for OFDM", <u>IEEE Transactions on Communications, Vol. 45, No. 12</u> , (Dec. 1997), 1613-1621	

**EXAMINER****DATE CONSIDERED**

Substitute Disclosure Statement Form (PTO-1449)

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. 1 Applicant's unique citation designation number (optional) 2 Applicant is to place a check mark here if English language Translation is attached